**In the claims:**

1. (Currently amended) A method of causing light emission from carbon nanotubes, comprising exposing carbon nanotubes having one or more gases absorbed or adsorbed thereto to microwave irradiation in an inert gas chamber or a vacuum chamber, wherein the microwave irradiation causes light emission and desorption of the gases from the carbon nanotubes.

2. (Currently amended) A method of causing mechanical motion of carbon nanotubes comprising exposing carbon nanotubes having one or more gases absorbed or adsorbed thereto to microwave irradiation in an inert gas chamber or a vacuum chamber, wherein the microwave irradiation causes mechanical motion of the carbon nanotubes and desorption of the gases from the carbon nanotubes.

3. (Currently amended) A method of causing carbon nanotube reconstruction, comprising exposing carbon nanotubes having one or more gases absorbed or adsorbed thereto to microwave irradiation in an inert gas chamber or a vacuum chamber, wherein the microwave irradiation causes reconstruction of the carbon nanotubes and desorption of the gases from the carbon nanotubes.

4. (Currently amended) A method of outgassing absorbed or adsorbed ~~species~~ gases from carbon nanotubes, comprising exposing carbon nanotubes having one or more gases absorbed or adsorbed thereto to microwave irradiation in an inert gas chamber or a vacuum chamber, wherein the microwave irradiation causes outgassing of the gases from the carbon nanotubes.

5. Cancelled.

6. (Original) The method of Claim 4 wherein the carbon nanotubes comprise single-walled carbon nanotubes.

7. (Original) The method of Claim 4 wherein the carbon nanotubes comprise multi-walled carbon nanotubes.

8. Cancelled.

9. (Currently amended) The method of Claim ~~8~~ 1, wherein the carbon nanotubes are subjected to microwave irradiation while in a vacuum chamber;

wherein the vacuum is between approximately $10^{-4}$ torr and $10^{-8}$ torr; and

the microwave frequency is between 0.1 GHz and 100 GHz.

10. (Currently amended) The method of Claim ~~8~~ 1, wherein the carbon nanotubes are subjected to microwave irradiation while in a vacuum chamber;

wherein the vacuum is between approximately $10^{-4}$ torr and $10^{-8}$ torr;

the microwave frequency is about 2.45 GHz; and

the microwave power is between 0.1 Watt and 1,500 Watts.

11. (Original) The method of Claim 4, wherein the microwave field incident upon the carbon nanotubes is about $1.01 \times 10^{-5}$ eV.

Claims 12 – 38. (Cancelled).

39. (New) The method of Claim 1 wherein the carbon nanotubes comprise single-walled carbon nanotubes.

40. (New) The method of Claim 2 wherein the carbon nanotubes comprise single-walled carbon nanotubes.

41. (New) The method of Claim 3 wherein the carbon nanotubes comprise single-walled carbon nanotubes.

42. (New) The method of Claim 1 wherein the carbon nanotubes comprise multi-walled carbon nanotubes.

43. (New) The method of Claim 2 wherein the carbon nanotubes comprise multi-walled carbon nanotubes.

44. (New) The method of Claim 3 wherein the carbon nanotubes comprise multi-walled carbon nanotubes.

45. (New) The method of Claim 2, wherein the carbon nanotubes are subjected to microwave irradiation while in a vacuum chamber;

wherein the vacuum is between approximately $10^{-4}$ torr and $10^{-8}$ torr; and

the microwave frequency is between 0.1 GHz and 100 GHz.

46. (New) The method of Claim 3, wherein the carbon nanotubes are subjected to microwave irradiation while in a vacuum chamber;

wherein the vacuum is between approximately $10^{-4}$ torr and $10^{-8}$ torr; and

the microwave frequency is between 0.1 GHz and 100 GHz.

47. (New) The method of Claim 4, wherein the carbon nanotubes are subjected to microwave irradiation while in a vacuum chamber;

wherein the vacuum is between approximately $10^{-4}$ torr and $10^{-8}$ torr; and

the microwave frequency is between 0.1 GHz and 100 GHz.

48. (New) The method of Claim 2, wherein the carbon nanotubes are subjected to microwave irradiation while in a vacuum chamber;

wherein the vacuum is between approximately $10^{-4}$ torr and $10^{-8}$ torr;

the microwave frequency is about 2.45 GHz; and

the microwave power is between 0.1 Watt and 1,500 Watts.

49. (New) The method of Claim 3, wherein the carbon nanotubes are subjected to microwave irradiation while in a vacuum chamber;

wherein the vacuum is between approximately $10^{-4}$ torr and $10^{-8}$ torr;

the microwave frequency is about 2.45 GHz; and

the microwave power is between 0.1 Watt and 1,500 Watts.

50. (New) The method of Claim 4, wherein the carbon nanotubes are subjected to microwave irradiation while in a vacuum chamber;

wherein the vacuum is between approximately $10^{-4}$ torr and $10^{-8}$ torr;

the microwave frequency is about 2.45 GHz; and

the microwave power is between 0.1 Watt and 1,500 Watts.

51. (New) The method of Claim 1, wherein the microwave field incident upon the carbon nanotubes is about $1.01 \times 10^{-5}$ eV.

52. (New) The method of Claim 2, wherein the microwave field incident upon the carbon nanotubes is about $1.01 \times 10^{-5}$ eV.

53. (New) The method of Claim 4, wherein the microwave field incident upon the carbon nanotubes is about $1.01 \times 10^{-5}$ eV.